



ICAO

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Agenda Item 2: States Challenges and Implementation Plan

INDONESIA'S OPERATIONAL EXPERIENCE IN IMPLEMENTING 30 NM LONGITUDINAL AND 10 NM SURVEILLANCE SEPARATION AND PROPOSED IMPLEMENTATION FRAMEWORK

(Presented by Indonesia)

SUMMARY

This paper presents Indonesia's operational experience in the implementation of 30 NM longitudinal separation and 10 NM surveillance separation within the Ujung Pandang FIR, including recent operational trials with adjacent FIRs. The paper outlines the current implementation status, enabling operational and technical conditions, and ongoing enhancement initiatives related to APAC Project 30/10 objectives.

Drawing from this operational experience, Indonesia further proposes a structured implementation framework consisting of four interdependent pillars: Regulatory Framework, Airspace Organisation, ATM Systems and Facilities, and Personnel. The framework is intended to support harmonised and systematic implementation of 30/10 operations across APAC States.

1. INTRODUCTION

1.1 The ICAO APAC Project 30/10 initiative aims to enhance regional airspace efficiency and capacity through the implementation of 30 NM longitudinal separation in procedural and remote airspace, and 10 NM separation in surveillance airspace, supported by Performance-Based Navigation (PBN), Performance-Based Communication and Surveillance (PBCS), and ATM system enhancements. The implementation of reduced separation minima requires States and Air Navigation Service Providers (ANSPs) to address multiple interrelated operational, technical, regulatory, and personnel-related factors.

1.2 Indonesia, through AirNav Indonesia as the designated ANSP in Indonesia, has progressively implemented reduced longitudinal and surveillance separation standards within the Ujung Pandang FIR in coordination with adjacent FIRs. This experience provides a practical basis from which implementation insights and a structured methodological approach may be derived.

1.3 This paper:

- a) provides an update on Indonesia's current implementation status of 30 NM longitudinal and 10 NM surveillance separation;
- b) outlines key enabling operational and technical conditions supporting implementation; and
- c) proposes a structured implementation framework for regional consideration under APAC Project 30/10.

2. DISCUSSION

Indonesia's Current 30 NM Longitudinal Separation Implementation Status

2.1 Indonesia currently applies 30 NM longitudinal separation minima at 18 Transfer of Control (TOC) points within Ujung Pandang FIR, based on RNP 4 operations. These comprise 15 TOC points on routes interfacing with Brisbane FIR and 3 TOC points on routes interfacing with Port Moresby FIR. This implementation is supported by overlapping surveillance coverage extending into adjacent FIR airspace, enabled by AIDC, and has been incorporated within the relevant bilateral ATS Letters of Agreement (LOAs) with Airservices Australia and Air Niugini Services.

2.2 Across Ujung Pandang FIR's 39 inbound TOC points, the authorised minimum horizontal separation standards currently comprise:

- a) 30 NM at 18 TOC points interfacing with Brisbane FIR and Port Moresby FIR based on RNP 4 operations;
- b) 10 NM surveillance separation at the TOC points with Jakarta FIR; and
- c) 50 NM, 10-minute Mach Number Technique (MNT), or other procedural separation minima at the remaining TOC points, including those interfacing with Manila FIR, Kinabalu FIR, and Oakland Oceanic Sector 5.

2.3 As part of ongoing implementation enhancement activities, operational trial application of 30 NM longitudinal separation commenced on 1 April 2026 at three Manila FIR boundary TOC points involving ATS routes A461, G578, and B472. The trial is currently being conducted under temporary coordination arrangements pending permanent implementation planned for June 2026. Before the commencement of trial operations, all affected Ujung Pandang ACC-rated personnel completed mandatory procedural training and operational familiarisation activities, including theoretical instruction and, where applicable, simulation exercises.

2.4 Indonesia also continues coordination with adjacent FIRs regarding the potential future expansion of reduced separation minima. In particular, Ujung Pandang ACC has confirmed its readiness to further discuss possible 30 NM operational trial arrangements with Kinabalu FIR, subject to technical coordination and bilateral agreement between the respective ANSPs. Further discussion on this matter is expected during the upcoming Indonesia–Malaysia Bilateral Meeting planned for August 2026.

2.5 At the boundary between Jakarta FIR and Ujung Pandang FIR, surveillance-based separation is currently applied. Although the standard surveillance separation minima may be reduced operationally under certain circumstances, an in-trail spacing of 10 NM is generally applied by ATC as a tactical flow management and sequencing measure for aircraft entering high-density sectors within Jakarta FIR.

2.6 Meanwhile, operations at the boundary between Ujung Pandang FIR and Oakland Oceanic Sector 5 currently continue under 50 NM longitudinal separation based on RNP 10 operations. Future reduction to 30 NM remains subject to further bilateral coordination and operational assessment.

2.7 Within Jakarta FIR, 30 NM is not yet applied at any of the FIR's 58 inbound TOC points. The currently authorised minima are 50 NM (or 10 min MNT) at oceanic TOC points, such as those with Chennai, Colombo, Melbourne, and Singapore FIRs; then 20 NM at the surveillance-based TOC points with Singapore, Kuala Lumpur, Kuching, and Kinabalu FIRs; and 10 NM at the internal boundary with Ujung Pandang FIR. The extension of 30 NM longitudinal separation into Jakarta FIR is principally enabled following the ongoing ATC system migration at Jakarta ACC (JATSC), which is targeted for completion in June 2026 and which will deliver the surveillance integration, automation, and PBCS conformance-monitoring functions required to support 30 NM operations. Nevertheless, this

extension will still require sufficient time and must be accompanied by a Safety Risk Assessment (SRA) and due consideration of the associated procedural changes for controllers.

2.8 PBCS (Performance-Based Communication and Surveillance — RCP 240 / RSP 180) has been implemented at Ujung Pandang ACC and supports the application of 30 NM longitudinal separation at the TOC points. Reference has been made to Indonesia AIC No. 02/18 dated 15 March 2018 (Implementation of RCP 240 and RSP 180 at Ujung Pandang FIR), which set out the initial framework for PBCS implementation. Publication of PBCS operational provisions in the AIP for Jakarta FIR and Ujung Pandang FIR has not yet been completed. Indonesia intends to publish the relevant PBCS provisions following completion of the JATSC ATC system migration, together with the planned formal publication of PBN airspace designation (RNP 4 / RNAV 10) for both FIRs.

Enabling Conditions for 30 NM Longitudinal Separation

2.9 Indonesia's ability to implement 30 NM longitudinal separation at the Ujung Pandang–Brisbane and Ujung Pandang–Port Moresby boundaries was predicated on the following enabling conditions, which are considered generalisable as prerequisites for 30/10 implementation:

- a) Surveillance Coverage: Confirmed ADS-B and/or radar coverage providing continuous surveillance of traffic at and near the TOC points, enabling application of surveillance-based rather than procedural separation;
- b) AIDC and Surveillance Data-Sharing: Confirmed AIDC connectivity and surveillance data-sharing at various TOC points with Brisbane FIR, facilitating seamless transfer of control with reduced separation;
- c) Bilateral Coordination: LOA/LOCA provisions with Brisbane FIR (Airservices Australia) and Port Moresby FIR (Air Niugini Services) specifically authorising the reduced separation standard at the identified TOC points. In addition, temporary LOCA provisions are currently in effect with Manila ACC to support the ongoing 30 NM trial arrangements at three Manila FIR boundary TOC points; and
- d) Operational Readiness: ATM automation system capabilities at Ujung Pandang ACC to process and display the reduced separation, complemented by ATC personnel who are fully trained and competency-checked on the applicable procedures.

2.10 While the majority of Indonesian airspace is classified as Category S (surveillance), further regulatory and aeronautical information publication enhancements are required to support the broader implementation of 30 NM longitudinal separation and PBCS operations within Jakarta FIR and Ujung Pandang FIR. These include:

- a) incorporation of relevant PBN airspace and PBCS operational provisions within the applicable national regulatory and air navigation framework.
- b) formal publication of PBN airspace designation (RNP 4 / RNAV 10) in the AIP for both Jakarta FIR and Ujung Pandang FIR following completion of the JATSC ATC system migration;
- c) publication of PBCS (RCP 240 / RSP 180) operational authorisation in the AIP for Jakarta FIR.

2.11 ATS Letters of Agreement (LOAs) with adjacent FIRs, including Colombo, Chennai, Melbourne and Singapore, are expected to be progressively updated to incorporate 30 NM separation provisions on qualifying routes once these enabling elements are in place.

Proposed Implementation Framework for 30/10

2.12 Indonesia's implementation journey at Ujung Pandang FIR — spanning regulatory establishment, bilateral LOA/LOCA negotiation, surveillance verification, and personnel training — demonstrates that 30/10 implementation is inherently multidimensional, where progress in any one domain is contingent on concurrent advancement across all others. This experience, including the challenges currently constraining 30 NM extension into Jakarta FIR, directly informed the structured Implementation Framework proposed below.

2.13 This Framework organises the key enabling dimensions of 30/10 implementation into four interdependent pillars, all converging to produce coherent 30/10 Rules and Procedures:

- a) Regulatory Framework: Review and amendment of civil aviation regulations, ATM procedures, and LOA/LOCA instruments to accommodate reduced separation standards;
- b) Airspace Organisation: Definition of vertical and horizontal limits, entry/exit point designations, airspace category determinations, near-boundary operation procedures, and cross-FIR coordination arrangements;
- c) ATM Systems and Facilities: Verification and upgrading of ATMAS capabilities (including conflict detection tools, safety nets, and data-sharing arrangements), surveillance infrastructure (ADS-B, ADS-C, CPDLC where applicable), and flight planning system support; and
- d) Personnel: Identification of impacted personnel, development and delivery of training (including PBN, procedure-specific, and simulation), ATC buy-in, and performance assessment.

2.14 The structural requirements for 30/10 implementation map directly to these four pillars. Reduced longitudinal separation to 30 NM requires a sound regulatory basis in national regulations and bilateral LOA/LOCA instruments; the identification of eligible airspace, routes, and TOC points — taking account of airspace categories, surveillance coverage, and adjacent FIR conditions — falls under Airspace Organisation; the ATM automation, surveillance, and communication systems required to safely apply and manage 30 NM separation correspond to ATM Systems and Facilities; and ATC training, procedures development, and controller competency checks are essential Personnel activities.

2.15 Indonesia therefore proposes that the Task Force consider adopting this Implementation Framework, as presented at **Appendix A**, as a regional reference methodology for guiding APAC States in the planning and execution of 30/10 implementation. It is further proposed that the framework be developed by the Task Force into a practical implementation guide or checklist, tailored to the specific technical and procedural requirements of 30/10 operations.

2.16 The application of a common framework across the region is expected to promote harmonisation of implementation approaches, facilitate identification of gaps and interdependencies, and support systematic Safety Risk Assessment (SRA) at each implementation phase — consistent with the objectives of APAC Project 30/10.

3. ACTION BY THE MEETING

3.1 The meeting is invited to:

- a) note the information contained in this paper on Indonesia's implementation of 30 NM longitudinal separation at Ujung Pandang FIR TOC points and the enabling conditions applied;
- b) consider the proposal to adopt the Implementation Framework as a regional methodology for guiding 30/10 implementation by APAC States; and

- c) if appropriate, consider using the Implementation Framework for 30/10 Operations in **Appendix A**, as regional reference methodology template for guiding APAC States in the planning and execution of 30/10 implementation.

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APPENDIX A

IMPLEMENTATION FRAMEWORK FOR 30/10 OPERATIONS

Note: The four pillars are interdependent and must be addressed concurrently, not sequentially. All pillars converge to produce implementable and safe 30/10 Rules and Procedures. A Safety Risk Assessment (SRA) should be conducted at each phase of implementation and reviewed as operational experience is gained.

Pillar	Implementation Activities
REGULATORY FRAMEWORK	Review and update all applicable national civil aviation regulations, ATM procedures, Aeronautical Information Publications (AIP), and Letters of Operational Coordination Agreement (LOCA) to accommodate the reduced separation standard. Ensure legal and procedural basis is established prior to implementation.
AIRSPACE ORGANISATION	Define eligible airspace (Category S/R), identify applicable routes and TOC points, confirm surveillance coverage and auto hand-off arrangements, address near-boundary operations, determine vertical and horizontal limits, and coordinate with adjacent FIRs. Assess compliance with ICAO airspace categorisation standards per the Asia/Pacific Seamless ANS Plan.
ATM SYSTEMS AND FACILITIES	Verify ATM Automation System (ATMAS) capability for reduced separation processing, conflict detection (FPCP, MTCD), and safety nets (RAM, DAIW). Confirm ADS-B/radar surveillance coverage at relevant TOC points. Implement PBCS (CPDLC/ADS-C) where required. Ensure Flight Planning Systems support applicable formats. Establish inter-facility surveillance data sharing.
PERSONNEL	Identify all impacted ATC and operational personnel. Develop and deliver targeted training covering applicable separation standards, procedures, PBN/PBCS concepts, and contingency measures. Conduct ATC simulation exercises and performance checks. Secure early controller engagement and ATC association buy-in as a critical success enabler.

Appendix A**Jakarta FIR — ATC Separation Standards at Inbound TOC Points****ATC Separation Standard | Jakarta FIR | Indonesia***Note: Minimum horizontal spacing authorized by ATS LOA at each FIR inbound Transfer of Control (TOC) point*

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
1	N563	MEMAK	Cat R → Cat S FIR TOC	50 NM	Chennai	Based on RNP10 operations	
2	M300	TOPIN	Cat R → Cat S FIR TOC	50 NM	Colombo	Based on RNAV 10 operations	
3	P627, P570	NIXUL	Cat R → Cat S FIR TOC	50 NM	Colombo	Based on RNAV 10 operations	
4	P756, L896	NISOK	Cat R → Cat S FIR TOC	50 NM	Colombo	Based on RNAV 10 operations	
5	M766	SELSU	Cat R → Cat R FIR TOC	50 NM	Colombo	Based on RNAV 10 operations	
6	L744, N628, L897	KETIV	Cat R → Cat R FIR TOC	50 NM	Colombo	Based on RNAV 10 operations	
7	N663	POSOD	Cat R → Cat R FIR TOC	10 Min MNT	Melbourne		
8	B325	AKUKO	Cat R → Cat R FIR TOC	10 Min MNT	Melbourne		
9	L897, G337, G209, R206	XXM	Cat R → Cat S FIR TOC	50 NM	Melbourne	Based on RNP10 operations	
10	N646, N752	ATMAL	Cat R → Cat S FIR TOC	50 NM	Melbourne	Based on RNP10 operations	
11	B469, L764	LAMOB	Cat R → Cat S FIR TOC	50 NM	Melbourne	Based on RNP10 operations	
12	L896, A585, L895	SAPDA	Cat R → Cat S FIR TOC	50 NM	Melbourne	Based on RNP10 operations	
13	M766, W16, W13	MADIN	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
14	T6	KALUT	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
15	W18	SPIKO	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
16	W15, M635	TAVIP	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
17	M774	TANUR	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
18	G464	SUGIK	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		

ATC Separation Standard | Jakarta FIR | Indonesia

Note: Minimum horizontal spacing authorized by ATS LOA at each FIR inbound Transfer of Control (TOC) point

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
19	W35	ENPIN	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
20	L504	OSRUT	Cat S → Cat S FIR TOC	10 NM	Ujung Pandang		
21	W26	KIRDA	Cat S → Cat S FIR TOC	20 NM	Singapore		
22	B470	ANITO	Cat S → Cat S FIR TOC	20 NM	Singapore		
23	W24, B469	ENPUX	Cat S → Cat S FIR TOC	20 NM	Singapore		
24	W22	TUSNU	Cat S → Cat S FIR TOC	20 NM	Singapore		
25	R469	TAROS	Cat S → Cat S FIR TOC	20 NM	Singapore		
26	L762	MIBEL	Cat S → Cat S FIR TOC	50 NM	Singapore	Based on RNP10 operations	
27	L625	GUTUP	Cat R → Cat S FIR TOC	50 NM	Singapore	Based on RNP10 operations	
28	N884	RILRI	Cat R → Cat S FIR TOC	50 NM	Singapore	Based on RNP10 operations	
29	M758	GULGU	Cat R → Cat S FIR TOC	10 Min MNT	Singapore		
30	M767	UKLIS	Cat R → Cat S FIR TOC	50 NM	Singapore	Based on RNP10 operations	
31	N875	ELGOR	Cat S → Cat S FIR TOC	20 NM	Singapore		
32	L644	LIGVU	Cat S → Cat S FIR TOC	20 NM	Singapore		
33	M758	UPVUN	Cat S → Cat S FIR TOC	20 NM	Singapore		
34	N884	VEGLO	Cat S → Cat S FIR TOC	20 NM	Singapore		
35	M761	LIPRO	Cat S → Cat S FIR TOC	20 NM	Singapore		
36	M635	UNSID	Cat S → Cat S FIR TOC	20 NM	Singapore		
37	B338	ENVUM	Cat S → Cat S FIR TOC	20 NM	Singapore		
38	G579	OLNUB	Cat S → Cat S FIR TOC	20 NM	Singapore		
39	B469	ATLIR	Cat S → Cat S FIR TOC	20 NM	Singapore		
40	B470	VEPGA	Cat S → Cat S FIR TOC	20 NM	Singapore		

ATC Separation Standard | Jakarta FIR | Indonesia

Note: Minimum horizontal spacing authorized by ATS LOA at each FIR inbound Transfer of Control (TOC) point

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
41	A464	APVIP	Cat S → Cat S FIR TOC	20 NM	Singapore		
42	G580	DOWON/HOSBA	Cat S → Cat S FIR TOC	20 NM	Singapore		
43	G334	BOPVA	Cat S → Cat S FIR TOC	20 NM	Singapore		
44	G334,M646	KAMIN	Cat S → Cat S FIR TOC	20 NM	Kuching		G334 (KAMIN): trial 30 NM and permanent 50 NM postponed — Kuching ACC has not yet implemented CRV and maintains suspension on surveillance-based spacing. Pending CRV implementation between Jakarta ACC and Kuching ACC (CAAM/AirNav, 1 April 2026).
45	M761	AGOBA	Cat S → Cat S FIR TOC	20 NM	Kuching		
46	G580	ATETI	Cat S → Cat S FIR TOC	20 NM	Kuching		
47	P468	OKADA	Cat S → Cat S FIR TOC	10 Min MNT	Kota Kinabalu		P468 (OKADA): 30 NM cannot be applied at this time — surveillance overlap only ~25 NM at FL380+ during EJAATS→New JAATS transition (ADSB Putusibau not yet integrated). Existing 50 NM remains applicable.
48	M772	ANIPU	Cat S → Cat S FIR TOC	10 Min MNT	Kota Kinabalu	Based on RNAV 10 operations	

ATC Separation Standard | Jakarta FIR | Indonesia

Note: Minimum horizontal spacing authorized by ATS LOA at each FIR inbound Transfer of Control (TOC) point

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
49	R455	PAPSA	Cat S → Cat S FIR TOC	10 Min MNT	Kota Kinabalu	Based on RNAV 10 operations	
50	N633, M300, N563	SALAX	Cat S → Cat S FIR TOC	20 NM	Kuala Lumpur		
51	P501	ANBUS	Cat S → Cat S FIR TOC	20 NM	Kuala Lumpur		
52	M630	SUKRI	Cat S → Cat S FIR TOC	20 NM	Kuala Lumpur		
53	R461	PUGER	Cat S → Cat S FIR TOC	20 NM	Kuala Lumpur		
54	G468	GOTLA	Cat S → Cat S FIR TOC	20 NM	Kuala Lumpur		
55	B466	TASEK	Cat R → Cat S FIR TOC	10 Min MNT	Kuala Lumpur		
56	B466	TOSOK	Cat R → Cat S FIR TOC	10 Min MNT	Kuala Lumpur		
57	P574, L762	ANSAX	Cat R → Cat S FIR TOC	50 NM	Kuala Lumpur	Based on RNP10 operations	
58	P627	POVUS	Cat R → Cat S FIR TOC	10 Min MNT	Kuala Lumpur		

Total TOC Points: 58

Appendix A**Ujung Pandang FIR — ATC Separation Standards at Inbound TOC Points****ATC Separation Standard | Ujung Pandang FIR | Indonesia***Note: Minimum horizontal spacing authorised by ATS LOA at each FIR inbound Transfer of Control (TOC) point*

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
1	B456	VANKA	Cat S → Cat S FIR TOC	30 NM	Port Moresby	Based on RNP 4 operations	
2	B462	KADAB	Cat S → Cat S FIR TOC	30 NM	Port Moresby	Based on RNP 4 operations	
3	A215	OSERO	Cat S → Cat S FIR TOC	30 NM	Port Moresby	Based on RNP 4 operations	
4	G459	BEGMI	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
5	B473, B588	OPABA	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
6	B472	TOREX	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
7	R340	GUTEV	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
8	A461	BUTPA	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
9	M768, A339	ELBIS	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
10	A464, M774	KIKEM	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
11	J199	MAKNI	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
12	A458	ALEGO	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
13	M766	SATNA	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
14	A587, G426	ONOXA	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
15	A576, M635	ATMAP	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
16	G578	EGATU	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
17	T20, B349	BOPLO	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
18	R592	PUPIT	Cat R → Cat S FIR TOC	30 NM	Brisbane	Based on RNP 4 operations	
19	T1	PROGO	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
20	W45, T3	ANY	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
21	T5	BOMAN	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	

ATC Separation Standard | Ujung Pandang FIR | Indonesia

Note: Minimum horizontal spacing authorised by ATS LOA at each FIR inbound Transfer of Control (TOC) point

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
22	W16, M766	MADIN	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
23	L511	RUPKA	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
24	W18	SPIKO	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
25	W15, M635	TAVIP	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
26	M774	TANUR	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
27	G464	SUGIK	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
28	W35	ENPIN	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
29	W36, L504	OSRUD	Cat S → Cat S FIR TOC	10 NM	Jakarta	Based on Surveillance	
30	R223	AGSON	Cat S → Cat S FIR TOC	10 min MNT	Kinabalu		
31	M522, M768	MAMOK	Cat S → Cat S FIR TOC	10 min MNT	Kinabalu	M768 already operationally applies 50 NM separation, but not yet incorporated in the ATS LOA. Incorporated to the ATS LOA for southeast-bound only (inbound to Ujung Pandang FIR). On 23 April 2024, (Ujung Pandang ACC, Kinabalu, Singapore, and Ho Chi Minh) conducted a trial implementation of 50 NM separation. The requirements for the trial were that aircraft must possess and indicate RSP180 in Item 18 and RCP240 in Item 10 of the flight plan, with no closing speed permitted. However,	M522 and M768 have been discussed for trial 30 NM and permanent 50 NM implementation, but currently postponed pending joint technical review (CAAM request, 13 April 2026).

ATC Separation Standard | Ujung Pandang FIR | Indonesia

Note: Minimum horizontal spacing authorised by ATS LOA at each FIR inbound Transfer of Control (TOC) point

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
						no follow-up action has been taken since the trial.	
32	G578	GORAI	Cat R → Cat S FIR TOC	50 NM	Manila		On trial to 30 NM, effective 1 April 2026; planned implementation June 2026.
33	A461	NITIP	Cat R → Cat S FIR TOC	50 NM	Manila		On trial to 30 NM, effective 1 April 2026; planned implementation June 2026.
34	R342, R590	PEDNO	Cat R → Cat S FIR TOC	10 min MNT	Manila		
35	B472	SELNO	Cat R → Cat S FIR TOC	50 NM	Manila		On trial to 30 NM, effective 1 April 2026; planned implementation June 2026.
36	B473	ELNIT	Cat R → Cat S FIR TOC	10 min MNT	Manila		
37	A339	BOLUG	Cat R → Cat R FIR TOC	10 min MNT	Manila		

ATC Separation Standard | Ujung Pandang FIR | Indonesia

Note: Minimum horizontal spacing authorised by ATS LOA at each FIR inbound Transfer of Control (TOC) point

No.	Route	TOC Point	Categories of Airspace to FIR TOC Point (Inbound)	Minimum Separation Implemented	Inbound Transferring FIR	Remarks / Route Restrictions	Trial / Improvement Plan
38	B462	BIDOR	Cat R → Cat R FIR TOC	10 min MNT	Manila		
39	A450	CAHYO	Cat R → Cat R FIR TOC	50 NM	Oakland Sec.5		
Total TOC Points: 39							

Appendix A

Indonesia Airspace Reference Maps

Figure 1. Indonesia Flight Information Regions — Jakarta FIR (blue) and Ujung Pandang FIR (orange); procedural airspace areas indicated.

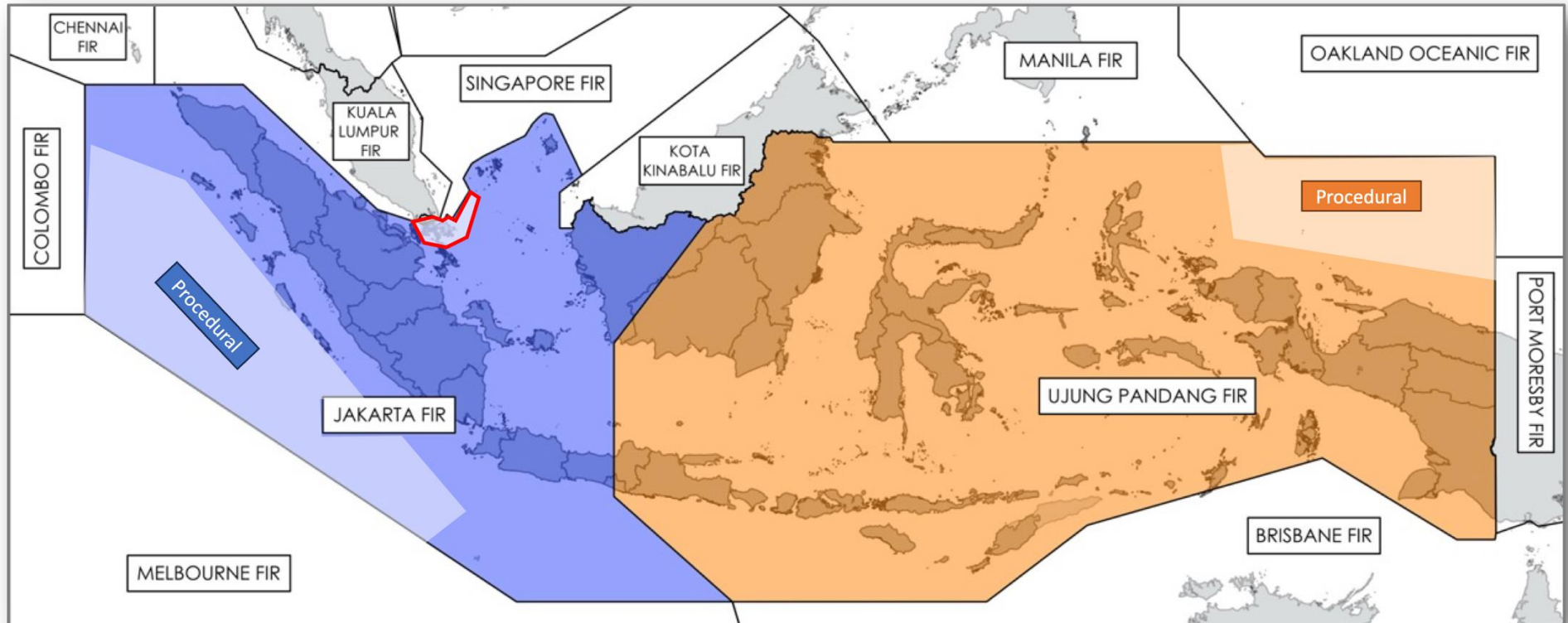
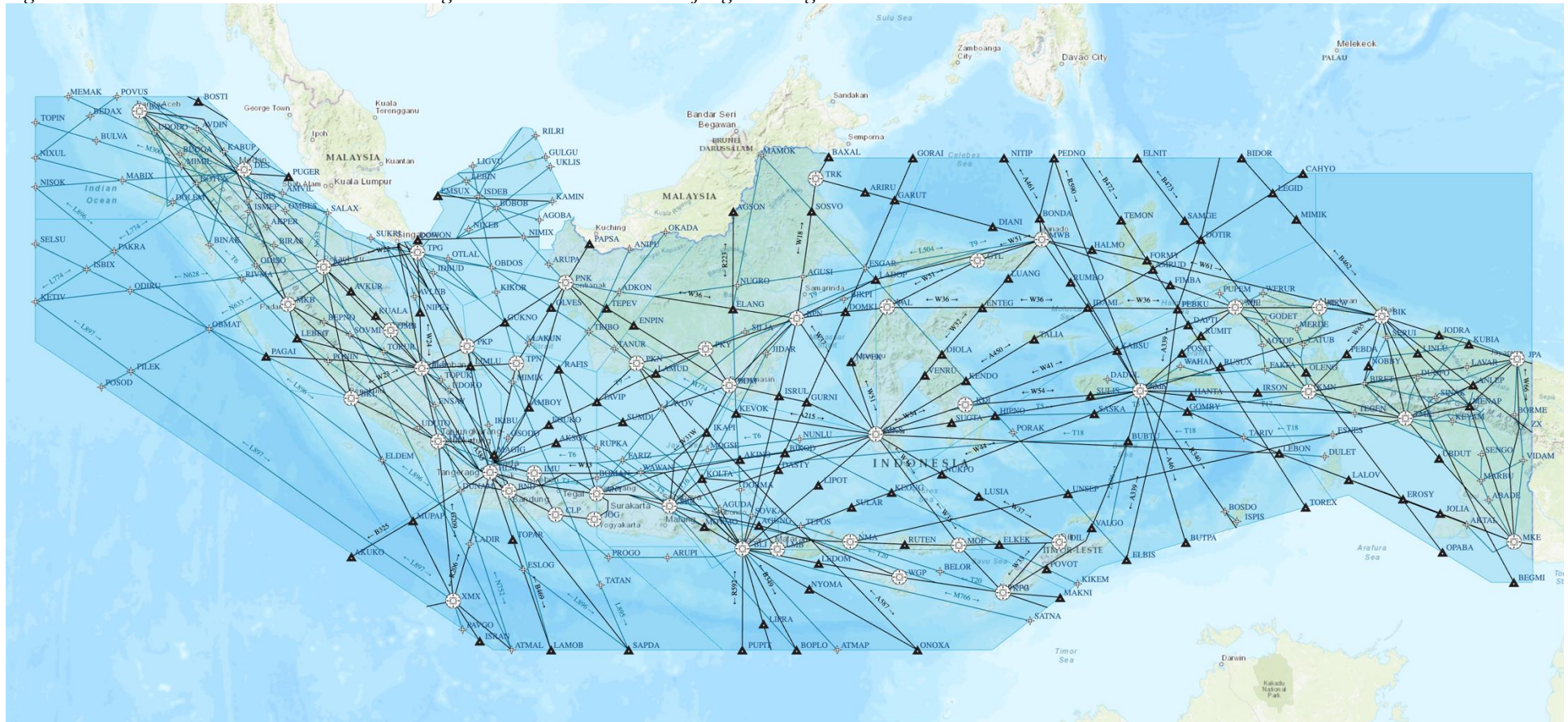


Figure 2. Indonesia ATS Route Network — coverage across Jakarta FIR and Ujung Pandang FIR.



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